

Notice of Allowability

Application No.

10/811,657

Applicant(s)

WU ET AL.

Examiner

Michael Trinh

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed October 02, 2006.
2. ☒ The allowed claim(s) is/are 1,2,5,6,9,10,13,14,17 and 18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

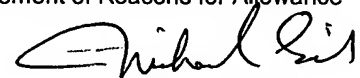
4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Michael Trinh
Primary Examiner

Art Unit: 2822

DETAILED ACTION

*** This office action is in response to Applicant's Amendment filed October 02, 2006.

Claims 1,2,5-6,9-10,13-14,17-18 are currently pending.

Allowable Subject Matter

1. Claims 1,2,5-6,9-10,13-14,17-18 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

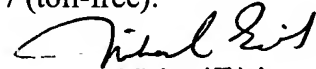
Applicant's amendment filed October 02, 2006 and convincing remarks of record have overcome the rejections in the last office action. The references of record including Agarwal (6,596,583), Iizuka (2002/0190294), Otsuki (6,919,273), Olewine (2003/0067023), etc., alone or in combination, do not anticipatively disclose each and every aspect of the claimed method for forming a MIM capacitor to reduce interaction of high-K deposition with bottom a electrode, or fairly make a prima facie obvious case of the claimed method, in combination with other processing claimed limitations as recited in base claim 1, the inclusion of providing a capacitor opening in the substrate; providing the bottom electrode comprising TiN in the capacitor opening; thermally annealing said bottom electrode comprising exposing the bottom electrode to nitrogen gas while subjecting the bottom electrode to thermal processing; providing a capacitor dielectric layer in the capacitor opening on the bottom electrode; and depositing a top electrode on the capacitor dielectric layer using a plasma-free deposition process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (571) 272-1847. The examiner can normally be reached on M-F: 9:00 Am to 5:30 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The central fax phone number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Oacs-16


Michael Trinh
Primary Examiner